

Work Order ID 76926

76926

Page 1

Wednesday, November 23, 2011 3:41:17 PM

Item ID: D205-634-041

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Skidtube

Start Date: 11/23/2011 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/9/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D2580-041

Rev.E

100

0.00

1.00

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG002

110

0.00

110

BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

1-Bend as per program D2580.C on CNC Bender and Folio 16

2-Cut tubes as per Dwg. D2580

3- scribe batch# in aft end of tube

N/A

①

SAD 12-01-30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120		0.00							
120									
Skidtubes	Memo	0.00							
Skidtubes	1- Deburr ends and remove bending marks								
	2- Prepare tube for welding as per QSI 004								
130	QC5- Inspect part completeness to step on W/O	0.00							
130									
QC	Memo	0.00							
Quality Control									

Handwritten notes:
12-02-06
DP 12-2-6

W/O:		WORK ORDER CHANGES					
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140		0.00							

140

Skidtubes

Skidtubes

Memo

0.00

1-Weld step D2576 as per Dwg. D2580 and QSI 004
 A/R Aluminum Rod *M119712*

2-Grind welds on step as per Dwg D2580 *MB2 12/02/17*

3-Weld spacers as per dwg D2580 *N/A*

3- ~~*** N/A ***~~ Insert D4202-1 spacer, swage as per QSI002 and trim/ grind
 flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2
 x17G to start expansion and finish with 1/2 x 18G to achieve dwg dimension.

4-Drill holes for wearplates using DT 8217 & DT8937 Open holes to 19/64",
 adjust stopper not to hit web. Deburr

6-Drill pilot holes for aft cap using DT 8215 Open holes to 0.208". Deburr

7-Drill pilot holes for Tow ring using DT8091, open to .640" and Deburr

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Run Start ***NR1***

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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150

QC10- Inspect visual per QSI004- ground welds

0.00

150

QC

Memo

0.00

Quality Control

160

QC5- Inspect part completeness to step on W/O

0.00

160

QC

Memo

0.00

Quality Control

170

Pressure Wash per QSI005 4.3

0.00

170

HandFinish

Memo

0.00

Hand Finishing

✓ Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

1 φ H 12/02/08

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N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 11/23/2011 **Start Qty:** 1.00

*** 1 ***

Cust Item ID:

Required Date: 12/9/2011 **Req'd Qty:** 1.00

*** 1 ***

Customer:

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

OC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

180	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00
-----	--	------

180

Powdercoat

Powder Coating

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

190	QC3- Inspect Part Finish	0.00
-----	--------------------------	------

190

QC

Memo

Quality Control

1X0 m/l 12/02/08

1 of 12 10/2/08

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--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

200

0.00

200

HandFinish

Hand Finishing

Memo

0.00

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291 M119508Sikaflex expire date: 12109

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with

Sikaflex. Clean excess adhesive

A/R Sikaflex-291 M119508

Sikaflex expire date: _____

5-Wing Walk as per Dwg D2580 and QSI 005 4.4

Batch: 1291251 \$ H 12102109

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Required Date: 12/9/2011 Req'd Qty: 1.00 ***1*** Customer:
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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210 *210* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024	0.00 0.00							
220 *220* Packaging Packaging Packaging	Packaging Memo Identify and pack for shipping as per PPPD205-634-041 Location: _____ PPP Rev: _____	0.00 0.00							
230 *230* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							

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Picklist Print

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Work Order ID: 76926

76926

Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 11/23/2011

Required Date: 12/9/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30
KJ IPP Rev P 10.02.19
per PAR09-043 EC verified by:DD
IPP Rev. O 06.02.28 Added paperwork EC
IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q
10.12.01 as per chg003 DD ver:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D4202-1 Manufactured No

140

Each

492.0000

20

20

D4202-1

**

Spacer

Location

Loc Qty

Loc Code

LG002

B 77729
492
66929 106
67129 196
67308 1
67430 140
72639 49

(20) 12-02-06

D2580-1 Manufactured No

110

Each

12.0000

1

1

D2580-1

**

205 Skidtube bent detail

SAO 12-01-30

Location

Loc Qty

Loc Code

LG

12
72965 1
76174 2
76175 2
76510 2
76511 1
76570 2
76571 2

B 78702

(1)

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W/O:		WORK ORDER CHANGES					
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Work Order ID: 76926

76926

Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 11/23/2011

Required Date: 12/9/2011

Start Qty: 1.00

Required Qty: 1.00

D2576-3 Manufactured No

140 Each 104.0000 1 1

D2576-3

Step (maching detail)

**

BE 12/02/07

LocationLoc QtyLoc Code

LG

104

66156

4

70883

50

74136

50

D2855 Manufactured No

200 Each 51.0000 1 1

D2855

Cap

**

B 75074 (x1) Jul 12/02/08

LocationLoc QtyLoc Code

FP002

49

73347

49

FP007

2

65519

2

AN3-5A Purchased No

200 Each 886.0000 2 2

AN3-5A

Bolt

**

Jul 12/02/08

LocationLoc QtyLoc Code

ST350

886

115371

46

117423

340

118626

300

119355

200

AN960JD10L NAS1149D0332J Purchased No

200 Each 0.0000 2 2

***AN960.ID10I *✓**

Washer

**

11119042 (x2) Jul 12/02/08

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D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 11/23/2011

Required Date: 12/9/2011

Start Qty: 1.00

Required Qty: 1.00

ALS7-1032-130

Purchased

No

200

Each

1,455.000

50

50

AI S7-1032-130

1119084 (x50) del 12/02/28

Insert

ALS4-1032-130

Location

Loc Qty

Loc Code

ST281

113

117717

27

118966

86

ST282

1342

119530

1342

AN3C4A

Purchased

No

200

Each

1,675.000

50

50

AN3C4A

1119749 (x50) del 12/02/08

BOLT

Location

Loc Qty

Loc Code

ST350

1675

117313

2

117688

5

117872

10

118112

16

118451

2

118838

962

119328

678

AN960C10L

NAS1149C0332

Purchased

No

200

Each

0.0000

50

50

***AN960C10I ***

1119736 (x50) del 12/02/08

washer

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 11/23/2011

Required Date: 12/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3566-13 Manufactured No

200 Each 21.0000 1 1

D3566-13

Gasket

****** B76947 (x1) M 12/02/08

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP	20	
----	----	--

73322	20	
-------	----	--

FP014	1	
-------	---	--

68341	1	
-------	---	--

D3566-5 Manufactured No

200 Each 21.0000 1 1

D3566-5

Gasket

****** B76945 (x1) M 12/02/08

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP002	21	
-------	----	--

75069	21	
-------	----	--

D3566-1 Manufactured No

200 Each 15.0000 2 2

D3566-1

Gasket

****** B77569 (x2) M 12/02/08

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP002	13	
-------	----	--

74518	13	
-------	----	--

FP015	2	
-------	---	--

68924	2	
-------	---	--

D3564-11 Manufactured No

200 Each 12.0000 1 1

D3564-11

Wearshoe

****** B76268 (x1) M 12/02/08

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP001	12	
-------	----	--

74705	12	
-------	----	--

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Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 11/23/2011

Required Date: 12/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3564-13

Manufactured No

200

Each

27.0000

1

1

D3564-13

Wearshoe

1376946 (x11) M 12/02/08

Location

Loc Qty

Loc Code

FP001

7

73323

7

FP002

19

75045

19

FP017

1

71594

1

D3564-9

Manufactured No

200

Each

21.0000

1

1

D3564-9

Wearshoe

1377613 (x11) M 12/02/08

Location

Loc Qty

Loc Code

FP

2

73345

2

FP001

14

75071

14

FP019

5

67590

4

69943

1

Dart Aerospace Ltd

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Parent Item Name: Replacement Skidtube

Start Date: 11/23/2011

Required Date: 12/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3564-5 Manufactured No

200 Each 35.0000 1 1

D3564-5

Wearshoe

**

12/02/08

Location Loc Qty Loc Code

FG 2

34806 2

FP001 32

74543 10

76269 22

FP019 1

73330 1

D2594-3 Manufactured No

200 Each 592.0000 16 16

D2594-3

O-Ring, 205 Skidtube

**

12/02/08

Location Loc Qty Loc Code

FP 394

65518 41

66952 55

73490 298

FP004 198

73490 198

D2594-1 Manufactured No

200 Each 208.0000 16 16

D2594-1

Plug, 205 Skidtube

**

1377035 (x16) 12/02/08

Location Loc Qty Loc Code

FP 208

73401 30

74442 178

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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LIST OF MATERIALS					
ITEM	QTY -041	QTY -045	QTY -047	PART NUMBER	DESCRIPTION
1	X			D2580-041	SKIDTUBE ASSEMBLY
2		X		D2580-045	SKIDTUBE ASSEMBLY
3			X	D2580-047	SKIDTUBE ASSEMBLY
4	1	1	1	D2500-1-190	EXTRUSION
5			16	D2570	BUSHING
6	1	1	1	D2576-3	STEP
7	20	24	25	D2579	SPACER
8	16	16	8	D2594-1	PLUG
9	16	16	8	D2594-3	O-RING
10	1	1	1	D2596	205 WEB
11	1	1	1	D2855	AFT CAP
12	1	1		D3564-5	WEARSHOE
13	1	1		D3564-9	WEARSHOE
14	1	1		D3564-11	WEARSHOE
15	1	1		D3564-13	WEARSHOE
16	2	2		D3566-1	GASKET
17	1	1		D3566-5	GASKET
18	1	1		D3566-13	GASKET
19			1	D4406-041	WEARPLATE ASSEMBLY
20			1	D4406-043	WEARPLATE ASSEMBLY
21	50	50		ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
22	50	50		AN3C4A	BOLT
23	2	2	2	AN3-5A	BOLT
24			8	AN4-45A	BOLT
25	50	50		NAS1149C0332R	WASHER (AN960C10L)
26	2	2	2	NAS1149D0332J	WASHER (AN960JD10L)
27			8	MS21042-4	NUT (OR MS21042L4)

GENERAL NOTES:

- MATERIAL: N/A
- FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: NONE
- WEIGHT: D2580-041 = 34.5 lbs
D2580-045 = 34.5 lbs
D2580-047 = 37.7 lbs
- WELDING PER DART QSI 004.
- INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/291.
- INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047)
- IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

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E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-B); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183	PH	07.04.05
C	REDRAWN, INCLUDED DEO 9094/9097	CP	98.08.26
B	AS MANUFACTURED	DS	96.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>#</i>		
DRAWN	RF		
CHECKED	<i>10</i>		
MFG. APPR.	<i>10</i>		
APPROVED	<i>10</i>		
DE APPR.	<i>10</i>		
DATE	11.06.21		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D2580
REV. E
SHEET 1 OF 8
TITLE 205 SKIDTUBE ASSEMBLY
SCALE NTS

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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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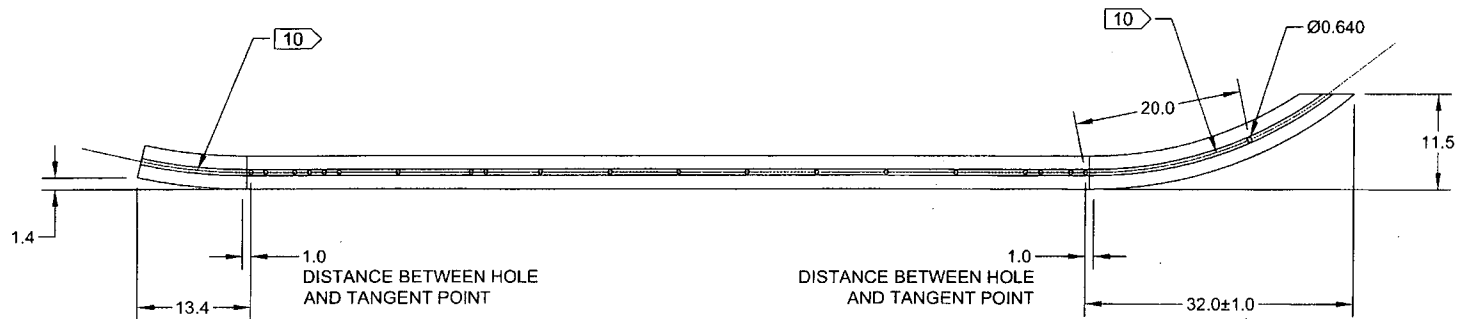
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D2580-1 BENT TUBE
(MAKE FROM D2580-101 TUBE)

11.06.21

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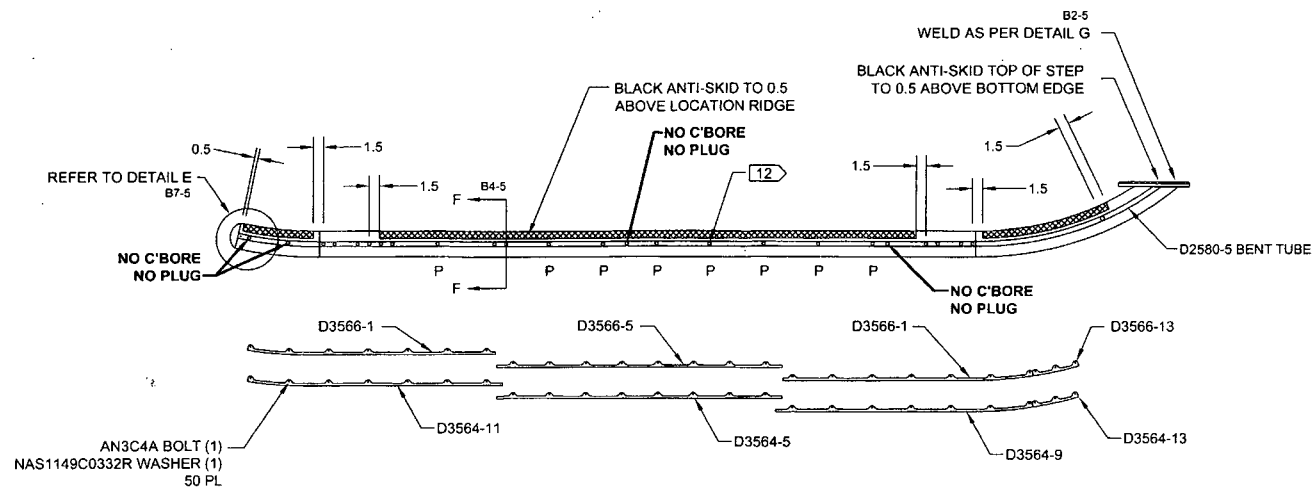
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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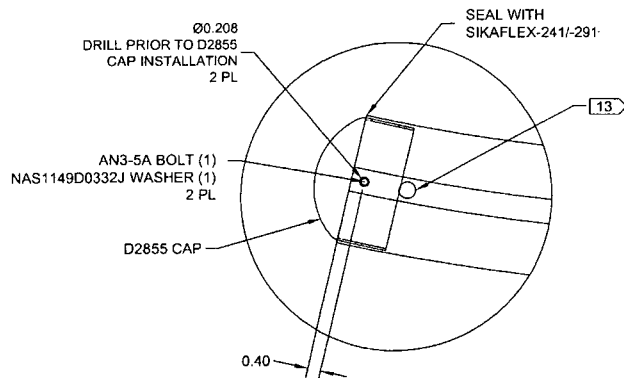
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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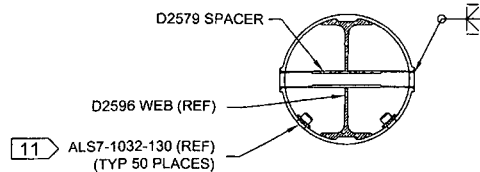


D2580-045 ASSEMBLY DETAIL

DETAIL E D7-5
SCALE 5X

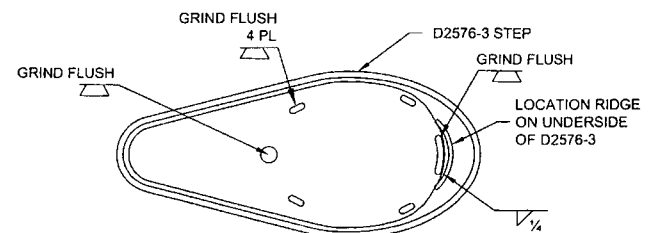


SECTION F-F D5-5
SCALE 5X



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (24 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

DETAIL G D3-5
SCALE 5X



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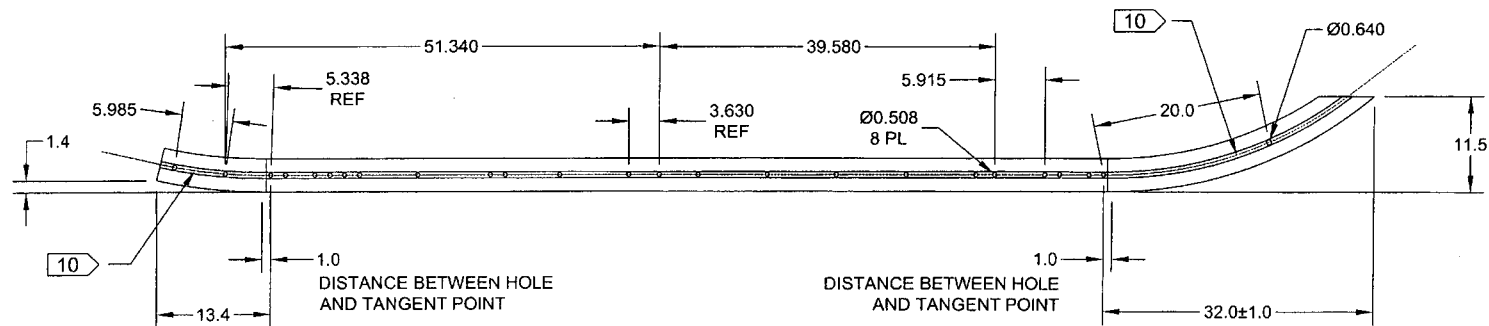
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Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____
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D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

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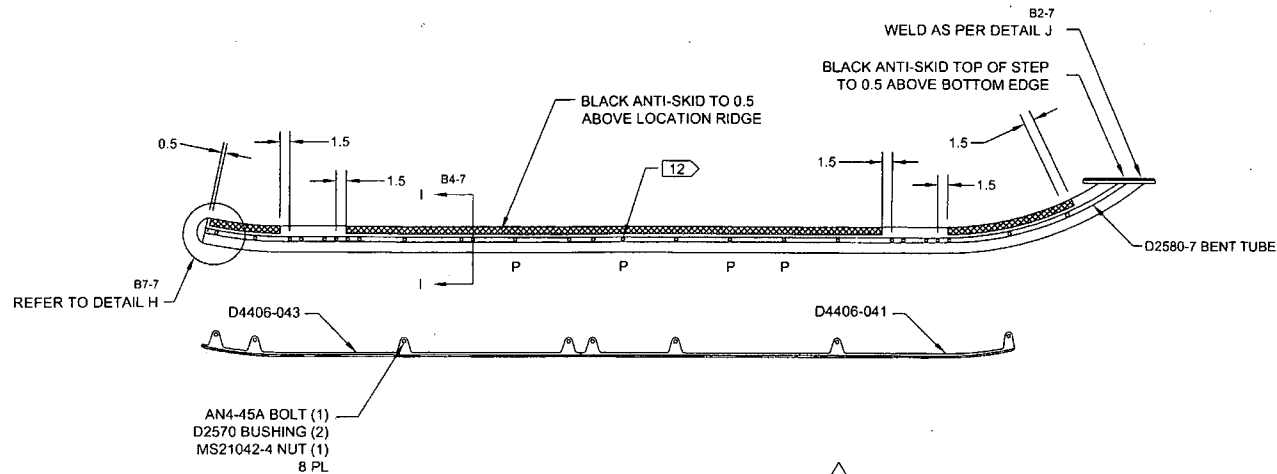
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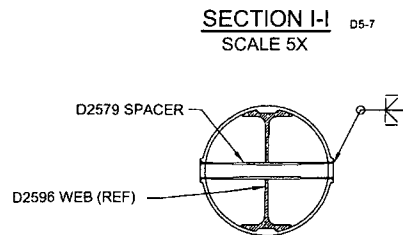
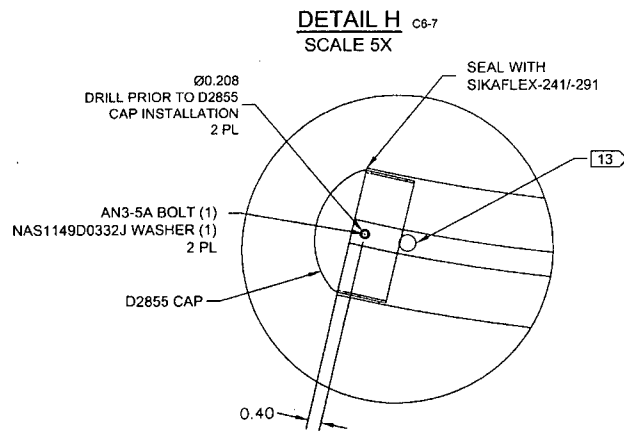
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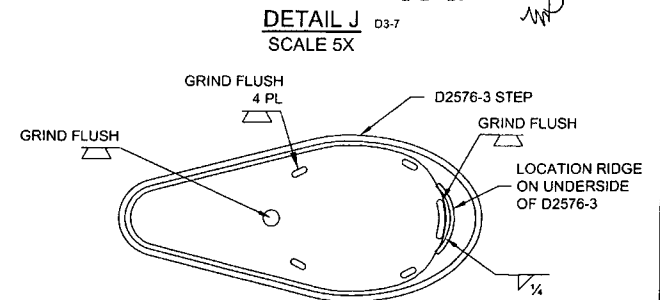
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D2580-047 ASSEMBLY DETAIL E



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (25 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP



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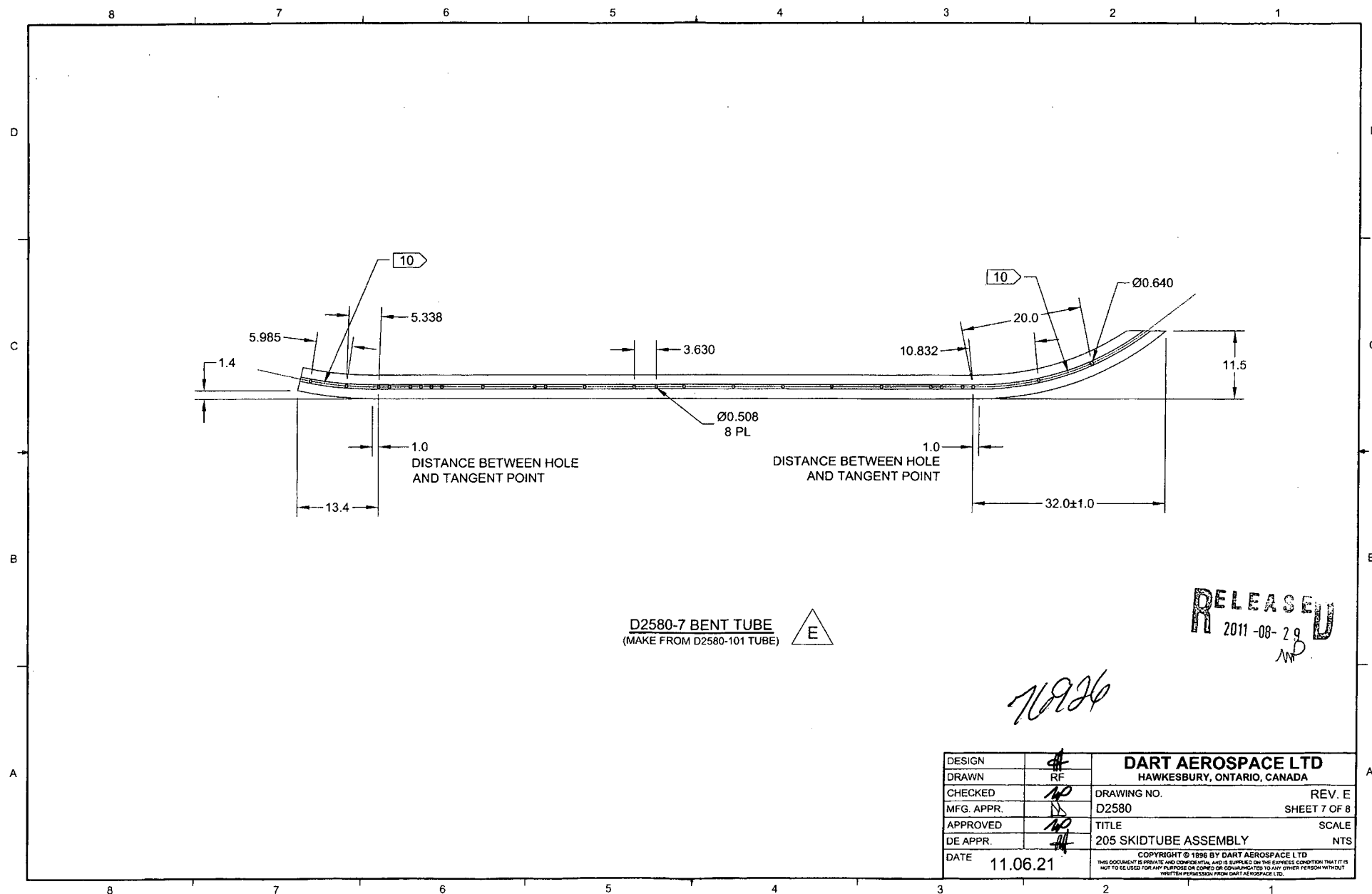
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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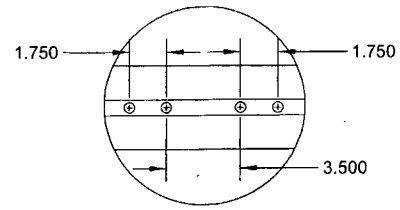
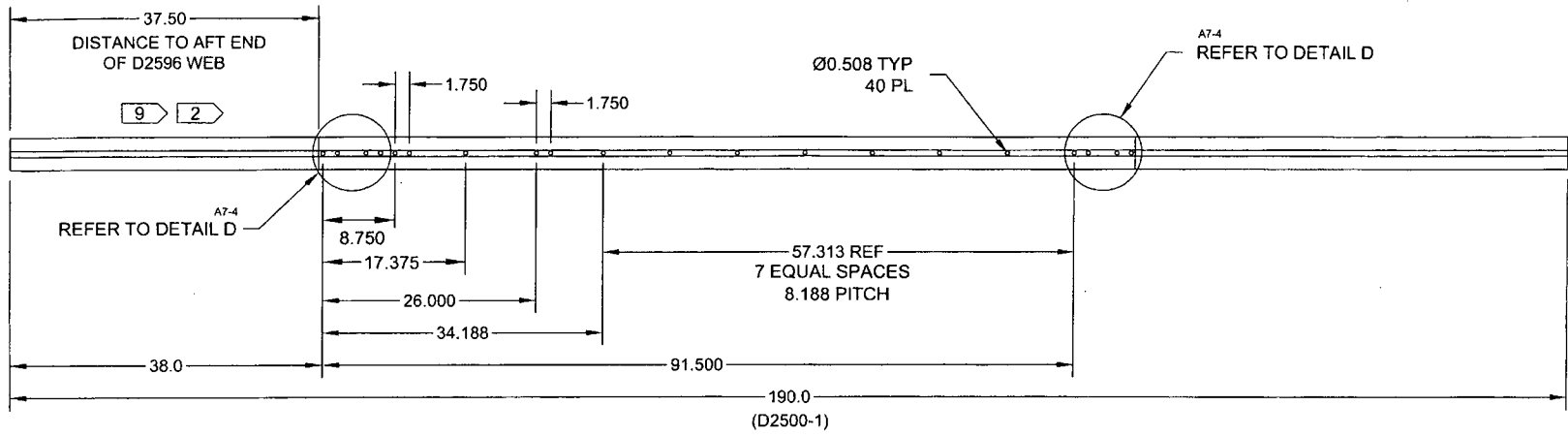
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DETAIL D D3-4
C7-4
SCALE 5X

D2580-101 TUBE

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